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ABSTRACT

Research on discourse comprehension in adulthood has yielded inconsistent findings. Some studies have reported age-related differences in comprehension and recall while others have found no differences between younger and older adults. To examine the recall style of younger and older adults, a narrative was presented to 40 younger (mean age=18.73 years) and 39 older (mean age=65.67 years) adults. Following the presentation, subjects produced written responses about the narrative under one of four recall conditions: total recall, summary, gist, or gist and moral. Individual written responses were unitized and each unit was assigned to one of four categories: (1) listing of individual text-based information units; (2) integrations of textual information; (3) interpretations of the text; or (4) additions to the text-based information. The results indicated that there were qualitative differences in the types of responses exhibited by younger and older subjects. In general, across recall conditions, younger subjects tended to list or closely reproduce text information while older subjects tended to transform the text proper into "gist" as well as interpretive units of meaning. These results suggest that there may be qualitative changes from young to mature adulthood in the nature of the transformations of information which are most likely to be processed. From an adaptive perspective, as individuals age, their knowledge processing style may become more heuristic, analogical, and figurative. (Author/NB)

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Qualitative Age Differences in Story Recall¹

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ABSTRACT

THE PRESENT STUDY EXAMINED THE RECALL STYLE OF YOUNG (MEAN AGE = 18.73 YEARS) AND OLDER ADULTS (MEAN AGE = 65.67 YEARS). FOLLOWING PRESENTATION OF A NARRATIVE, SUBJECTS PRODUCED WRITTEN RESPONSES UNDER ONE OF FOUR RECALL CONDITIONS: TOTAL RECALL, SUMMARY, GIST, OR GIST AND MORAL. INDIVIDUAL WRITTEN RESPONSES WERE UNITIZED AND EACH UNIT WAS ASSIGNED TO ONE OF FOUR CATEGORIES: LISTINGS OF INDIVIDUAL TEXT-BASED INFORMATION UNITS; INTEGRATIONS OF TEXTUAL INFORMATION; INTERPRETATIONS OF THE TEXT; OR ADDITIONS TO THE TEXT-BASED INFORMATION. RESULTS INDICATED THAT THERE WERE QUALITATIVE DIFFERENCES IN THE TYPES OF RESPONSES EXHIBITED BY YOUNG AND OLDER SUBJECTS. IN GENERAL, ACROSS RECALL CONDITIONS, THE YOUNG ADULTS TENDED TO 'LIST' OR CLOSELY REPRODUCE, THE INFORMATION AS IT WAS PRESENTED IN THE TEXT. THE OLDER ADULTS, IN CONTRAST, TENDED TO TRANSFORM THE TEXT PROPER INTO 'GIST' AS WELL AS INTERPRETIVE UNITS OF MEANING, E.G. STATEMENTS ABOUT THE MORAL AND SOCIAL-NORMATIVE MEANING OF THE STORY. THESE RESULTS SUGGEST THAT THERE MAY BE QUALITATIVE CHANGES FROM YOUTH TO MATURE ADULthood IN THE NATURE OF THE TRANSFORMATIONS OF INFORMATION WHICH ARE MOST LIKELY TO BE PROCESSED. THESE PROPOSED PROCESSING CHANGES ARE DISCUSSED WITHIN THE CONTEXT OF AN ADAPTIVE VIEW OF AGING.

STATEMENT OF THE PROBLEM

WITHIN AN INFORMATION-PROCESSING FRAMEWORK, RESEARCH ON DISCOURSE COMPREHENSION IN ADULTHOOD HAS YIELDED A BODY OF INCONSISTENT FINDINGS: SOME STUDIES REPORT AGE-RELATED DIFFERENCES IN COMPREHENSION AND RECALL; OTHERS FIND NO DIFFERENCES BETWEEN YOUNG AND OLDER ADULTS. WHEN AGE DIFFERENCES ARE OBSERVED, HOWEVER, THEY ARE USUALLY ATTRIBUTED TO ORGANIZATIONAL DEFICITS AND/OR DEEP PROCESSING FAILURES (FOR REVIEW SEE HULTSCH & DIXON, 1984).

THE VALIDITY OF A 'DEFICIT' INTERPRETATION HAS RECENTLY BEEN QUESTIONED BY AUTHORS ORIENTED BY A MORE ADAPTIVE VIEW OF AGING. FROM THIS PERSPECTIVE, CERTAIN CHANGES ASSOCIATED WITH AGE MAY HAVE ADAPTIVE, RATHER THAN MALADAPTIVE, VALUE (BRENT, 1978; GUTTMAN, 1977; LABOUVIE-VIEF & BLANCHARD-FIELDS, 1982). THE EXACT NATURE OF SUCH CHANGES AND THEIR EFFECT ON THE AGING INFORMATION-PROCESSING SYSTEM, HOWEVER, REMAIN UNSPECIFIED AT PRESENT.

THE REASON FOR THIS AMBIGUITY MAY PARTIALLY RESIDE IN THE FACT THAT THE MODELS BY WHICH OLDER ADULTS' BEHAVIOR HAS BEEN EVALUATED WERE DESIGNED TO TAP THOSE WAYS OF PROCESSING IN WHICH YOUNG PEOPLE SEEM TO EXCEL. THE ANALYTIC SYSTEMS TYPICALLY USED TO EVALUATE DISCOURSE COMPREHENSION, FOR EXAMPLE, SCORE AS 'CORRECT' ONLY THOSE ASPECTS OF DISCOURSE WHICH ARE RELATIVELY 'SURFACE-BASED' OR PART OF THE TEXT PROPER. THE READER IS THUS ASSUMED TO CONSTRAIN HIS OR HER PROCESSING ACTIVITIES TO AN OBJECTIVE ANALYSIS OF A TEXT'S CONTENT STRUCTURE WHILE AT THE SAME TIME ABSTAINING FROM ANY FORM OF INTERPRETIVE ACTIVITY.

RECENT STUDIES ON ADULT COGNITION SUGGEST THAT THIS IS EXACTLY WHAT YOUNG PEOPLE TEND TO DO (FOR REVIEW SEE LABOUVIE-VIEF & BLANCHARD-FIELDS, 1982). THEIR MODE OF RESPONDING, THEREFORE, PROVIDES A FAIRLY PREDICTABLE MATCH FOR THE LEVEL OF MEANING AT WHICH PERFORMANCE IS TYPICALLY EVALUATED. MATURE ADULTS, IN CONTRAST, MAY TEND INSTEAD TO EVALUATE A TEXT'S PROPOSITIONAL CONTENT. THEIR PROCESSING MAY THUS SHIFT TO A MODE IN WHICH DIMENSIONS OF 'GIST', SOCIAL, AND PERSONAL MEANING ARE ENCODED (SEE LABOUVIE-VIEF & BLANCHARD-FIELDS, 1982). WHAT THESE INDIVIDUALS PRODUCE AT RECALL MAY THUS BE MORE NOVEL AND COMPLEX THAN WHAT CAN BE ACCOUNTED FOR BY THE ANALYTIC SYSTEMS TYPICALLY EMPLOYED.

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STATEMENT OF THE PROBLEM (CONT'D)

THE SOLE RELIANCE ON A STRICTLY PROPOSITIONAL ANALYSIS OF DISCOURSE COMPREHENSION MAY BE EXCLUDING, THEREFORE, THE VERY KINDS OF TRANSFORMATIONS OF INFORMATION THAT OLDER ADULTS ARE MOST LIKELY TO MAKE. MOREOVER, BY EXCLUDING SUCH FORMS OF PROCESSING, MODELS OF COMPREHENSION AND RECALL MAY BE, IN EFFECT, EXCLUDING MODES OF INFORMATION ENCODING AND TRANSMISSION FOR WHICH OLDER ADULTS HAVE BECOME SPECIALIZED, E.G. CULTURAL KNOWLEDGE IN THE FORM OF METAPHORS, PROVERBS, OR SOCIAL RULES (SEE GUTTMAN, 1977; LEVINE, 1980; MERGLER, FAUST, & GOLDSTEIN, 1984-85). THEREFORE, IN THE PRESENT STUDY WE TAKE THE POSITION THAT INFORMATION-PROCESSING CHANGES ASSOCIATED WITH AGING CAN BEST BE UNDERSTOOD WHEN EXAMINED WITHIN THE BROADER CONTEXT OF AN ADAPTIVE VIEW OF AGING.

PURPOSE AND HYPOTHESIS

THE PRESENT STUDY WAS DESIGNED TO REPLICATE AND EXTEND THE FINDINGS FROM AN EARLIER STUDY BY LABOUIE-VIEF, SCHELL, & WEAVERDYCK (1981). IN THAT STUDY, THE HYPOTHESIS THAT APPARENT AGING DEFICITS IN TEXT RECALL MAY RESULT FROM QUALITATIVE CHANGES IN ENCODING DIMENSIONS WAS EXAMINED. IT WAS FOUND THAT YOUNG AND OLDER ADULTS RESPONDED VERY DIFFERENTLY WHEN ASKED TO RECALL OR SUMMARIZE A FABLE. THE YOUNG UNDER EITHER CONDITION PRODUCED DETAILED, ALMOST VERBATIM, REPRODUCTIONS OF THE FABLE'S TEXT. THE OLDER ADULTS BEHAVED MUCH LIKE THE YOUNG UNDER THE 'RECALL' CONDITION. HOWEVER, UNDER THE 'SUMMARY' CONDITION, WHERE RESPONDING WAS FREER TO VARY, THEY PRODUCED RESPONSES WHICH REPRESENTED THE MORAL AND SOCIAL-NORMATIVE MEANING OF THE INFORMATION STATED. THIS FORM OF RESPONDING COULD NOT AT ALL BE CAPTURED BY THE SCORING CRITERIA AVAILABLE AND, YET, THE ESSENTIAL MEANING OF THE FABLE WAS COHERENTLY CONVEYED IN THIS TYPE OF RECALL.

TO EXAMINE THE GENERALIZABILITY OF THESE FINDINGS, WE CHOSE A DIFFERENT FABLE AND, IN ADDITION, CONSTRUCTED A SECOND NARRATIVE FROM THAT FABLE. THE PROPOSITIONAL AND NARRATIVE STRUCTURES OF THE CONSTRUCTED TEXT WERE BOTH GENERATED TO MATCH THOSE SAME STRUCTURES IN THE FABLE. THUS, THE TWO TEXTS WERE SIMILAR IN FORM, BUT DIFFERENT IN CONTENT.

TO OBSERVE VARIABILITY IN RESPONDING AS A FUNCTION OF INSTRUCTIONS AT RECALL, WE REPEATED THE 'RECALL' AND 'SUMMARY' CONDITIONS AND INCLUDED TWO ADDITIONAL CONDITIONS AS WELL. IN ONE, SUBJECTS WERE ASKED TO GIVE THE 'GIST' OF THE STORY; IN THE OTHER, THEY WERE ASKED TO GIVE THE 'GIST AND A MORAL'.

WE REPORT HERE THE RESULTS BASED ON AN ANALYSIS OF THE CONSTRUCTED TEXT. THE STORY WAS ABOUT THE COMPLICATIONS AND RESOLUTIONS EXPERIENCED BY A MAN IN PURSUIT OF HIS LIFE'S DREAM. ALTHOUGH POTENTIALLY OPEN TO INTERPRETATION, THIS STORY DID NOT SHARE THE SAME DEMAND CHARACTERISTICS AS THE FABLE. WE PREDICTED THAT IN THIS SITUATION THERE WOULD BE QUALITATIVE DIFFERENCES IN THE RESPONSE MODES EXHIBITED BY YOUNG AND OLDER ADULTS: YOUNG ADULTS WERE EXPECTED TO EXHIBIT A HIGHLY LITERAL AND 'TEXT-DEPENDENT' FORM OF RESPONDING, WHEREAS MATURE ADULTS WERE EXPECTED TO EMPHASIZE THE 'GIST' AS WELL AS MORAL AND SOCIAL-NORMATIVE MEANING OF THIS TEXT.

MATERIALS AND PROCEDURES

A NARRATIVE, 520 WORDS IN LENGTH, WAS CONSTRUCTED FOR USE IN THIS STUDY. THE NARRATIVE STRUCTURE CONTAINED SIX MACRO-SECTIONS: A SETTING SECTION (WHICH CONTAINED INFORMATION ABOUT THE STORY'S PROTAGONIST, JOHN - A BIOCHEMIST, AND HIS GOAL, TO MAKE A MAJOR CONTRIBUTION TO SCIENCE); 4 EPISODES (WHICH CONTAINED INFORMATION ABOUT JOHN'S ATTEMPTS TOWARD ACHIEVING HIS GOAL, COMPLICATIONS ARISING FROM THOSE ATTEMPTS, AND THE RESOLUTIONS OF THE COMPLICATIONS); AND AN ENDING SECTION (WHICH CONTAINED INFORMATION ABOUT JOHN'S REACTION TO THE FINAL RESOLUTION, OR ACHIEVEMENT OF HIS GOAL). THE CONTENT STRUCTURE OF THE TEXT WAS SEGMENTED INTO 68 UNITS OF INFORMATION.

YOUNG AND OLDER ADULT SUBJECTS (SEE TABLE 1 FOR DEMOGRAPHIC DATA) READ A WRITTEN VERSION OF THE STORY WHILE LISTENING TO AN AUDIO-RECORDED VERSION THROUGH STEREO EARPHONES. THEY WERE TOLD TO LISTEN/READ CAREFULLY AS THEY WOULD BE ASKED SOME QUESTIONS ABOUT THE STORY AFTERWARD. AT RECALL, EACH PARTICIPANT WAS RANDOMLY ASSIGNED (WITHIN EACH AGE BY SEX GROUP) TO ONE OF THE FOUR FOLLOWING INSTRUCTION CONDITIONS:

- (1) TOTAL RECALL ('WRITE AS MUCH AS YOU CAN REMEMBER OF THE STORY.')
- (2) SUMMARY ('WRITE A SUMMARY OF THE STORY.')
- (3) GIST ('WRITE THE GIST OF THE STORY.')
- (4) GIST + MORAL ('WRITE THE GIST OF THE STORY; INCLUDE A MORAL IN YOUR RESPONSE.')

PROTOCOL SCORING

PROTOCOLS WERE SEGMENTED INTO INDIVIDUAL INFORMATION UNITS FOR SCORING. A UNIT OF INFORMATION WAS DEFINED AS A COMBINATION OF WORDS THAT CONVEYED A SINGLE IDEA. INDIVIDUAL PROTOCOL UNITS WERE THEN IDENTIFIED AS ONE OF THE FOLLOWING RESPONSE TYPES:

- (1) A LISTING OF ONE OF THE TEXT'S INFORMATION UNITS. THESE RESPONSES REPRESENTED INFORMATION THAT WAS DIRECTLY STATED IN THE TEXT PROPER. IDENTIFICATION AS A LISTING REQUIRED THAT THE EXACT TEXT UNIT REPRESENTED BE SPECIFIED.
- (2) AN INTEGRATION OF THE TEXT'S INFORMATION UNITS. THESE RESPONSES REPRESENTED THE 'GIST' OF THE TEXT'S INFORMATION. IDENTIFICATION AS AN INTEGRATION REQUIRED:
 - (a) THAT THE PROTOCOL UNIT DID NOT REPRESENT A SPECIFIC UNIT OR UNITS IN THE TEXT AND
 - (b) THAT THE PROTOCOL UNIT DID REPRESENT A SYNTHESIS OF THE INFORMATION CONTAINED IN ONE OR MORE OF THE TEXT'S MACRO-SEGMENTS.
- (3) AN INTERPRETATION OF THE INFORMATION GIVEN IN THE TEXT. THESE RESPONSES REPRESENTED THE MORAL OR SOCIAL-NORMATIVE MEANING OF THE STORY IN A FORM THAT WAS DISTINCT FROM THE WAY IN WHICH THAT INFORMATION WAS PRESENTED IN THE TEXT PER SE.
- (4) AN ADDITION TO THE INFORMATION GIVEN. THESE RESPONSES 'FILLED IN', OR ELABORATED, THE INFORMATION GIVEN IN THE TEXT.
- (5) AN ERROR. THESE RESPONSES WERE EITHER INCORRECT FACTS OR IMPLAUSIBLE ADDITIONS OR INTERPRETATIONS. THE PRESENCE OF ERRORS IN THESE PROTOCOLS WAS NEGLIGIBLE.

SEE TABLE 2 FOR EXAMPLES.

SUMMARY OF RESULTS

THE MEAN NUMBER OF PROTOCOL UNITS IN EACH RESPONSE CATEGORY FOR EACH AGE GROUP BY RECALL CONDITION ARE PRESENTED IN TABLE 3. THREE SEPARATE 2 (AGE GROUP) $\times$ 4 (RECALL CONDITION) ANALYSES OF VARIANCE CONDUCTED FOR THE LISTINGS, INTEGRATIONS, AND ADDITIONS CATEGORIES PRODUCED THE FOLLOWING RESULTS:

- (1) OLDER ADULTS PRODUCED FEWER LISTINGS AT RECALL (MEAN = 9.72) THAN YOUNG ADULTS (MEAN = 17.88) ($F_{(1,71)} = 33.84, p < .001$).
- (2) THERE WERE MORE LISTINGS PRODUCED IN THE TOTAL RECALL CONDITION (MEAN = 17.10) THAN IN ANY OF THE OTHER THREE CONDITIONS (SUMMARY = 13.40, GIST = 12.90, GIST + MORAL = 11.89) ($F_{(3,71)} = 2.74, p < .05$).
- (3) OLDER ADULTS PRODUCED FEWER ADDITIONS (MEAN = 1.49) THAN YOUNG ADULTS (MEAN = 2.63) ($F_{(1,71)} = 6.29, p < .01$).
- (4) THERE WERE NO AGE DIFFERENCES IN THE NUMBER OF INTEGRATIONS PRODUCED AT RECALL (OLDER ADULTS, MEAN = 2.62; YOUNG ADULTS, MEAN = 2.05).
- (5) NONE OF THE AGE GROUP BY RECALL CONDITION INTERACTIONS WERE SIGNIFICANT.

INTERPRETATIONS WERE NOT OBSERVED IN FOUR OUT OF EIGHT CELLS; THEREFORE AN ANOVA WAS NOT CONDUCTED ON THESE DATA. THE PATTERN OF CELL MEANS SHOWS, HOWEVER, THAT FOR THE YOUNG ADULTS THIS TYPE OF RESPONSE ONLY OCCURRED WHEN THE TASK 'DEMANDED' IT, I.E. GIST + MORAL CONDITION. FOR THE OLDER ADULTS, HOWEVER, INTERPRETATIONS WERE PRESENT AT RECALL IN ALL CONDITIONS EXCEPT TOTAL RECALL.

IN ORDER TO IDENTIFY QUALITATIVELY DISTINCT PATTERNS OF RESPONDING, THE 79 INDIVIDUAL PROTOCOLS WERE SUBMITTED TO HIERARCHICAL CLUSTER ANALYSIS (SPSSX CLUSTER ANALYSIS PROGRAM, USING WARD'S TECHNIQUE). THE RESPONSE CATEGORY SCORES, TRANSFORMED TO STANDARD Z-SCORES, WERE USED IN THIS ANALYSIS. THREE DISTINCT RESPONSE PATTERNS WERE IDENTIFIED. FIGURE 1 SHOWS THE MEAN PROFILES FOR EACH OF THE THREE CLUSTERS, OR RESPONSE PATTERNS. DESCRIPTIONS FOR EACH RESPONSE PATTERN ARE GIVEN IN TABLE 4.

SUMMARY OF RESULTS (CONT'D)

TO EXAMINE THE RELATIONSHIP BETWEEN AGE AND RESPONSE PATTERN, A HIERARCHICAL LOG LINEAR ANALYSIS WAS CONDUCTED WITH AGE GROUP, RECALL CONDITION, AND CLUSTER AS THE VARIABLES. TABLE 5 SHOWS THE NUMBER OF SUBJECTS IN EACH OF THE THREE CLUSTERS FOR EACH AGE GROUP BY RECALL CONDITION. THE LOG LINEAR ANALYSIS REVEALED A MAIN EFFECT FOR AGE GROUP (SEE TABLE 6). AS SHOWN, 24 (OR 62%) OF THE YOUNG ADULT PROTOCOLS WERE DESCRIBED BY RESPONSE PATTERN 1, 13(33%) BY RESPONSE PATTERN 2, AND ONLY 2(5%) BY PATTERN 3 (BOTH OF WHICH WERE IN THE GIST + MORAL CONDITION). IN CONTRAST, ONLY 10(OR 26%) OF THE OLDER ADULT PROTOCOLS WERE IDENTIFIED AS PATTERN 1 RESPONSES, WHEREAS 15(38%) WERE IDENTIFIED AS PATTERN 2 AND 14(36%) AS PATTERN 3 (EIGHT OF WHICH WERE NOT IN THE GIST + MORAL CONDITION). NEITHER THE MAIN EFFECT FOR RECALL CONDITION NOR THE INTERACTION WAS SIGNIFICANT IN THIS ANALYSIS.

DISCUSSION

THE RESULTS REPORTED HERE SUGGEST THAT THERE ARE QUALITATIVE DIFFERENCES IN THE RESPONSE STYLES THAT DIFFERENTIATE MATURE FROM YOUNG ADULTS. IN GENERAL, THE OLDER ADULTS IN THIS STUDY EXHIBITED A STYLE OF RESPONDING WHICH WAS MORE ABSTRACT AND INTEGRATIVE THAN THE HIGHLY 'TEXT-DEPENDENT' STYLE CHARACTERISTIC OF THE YOUNG ADULT SUBJECTS. THIS FINDING IS CONSISTENT WITH REPORTS THAT OLDER ADULTS TEND TO FOCUS ON HIGHER-ORDER RATHER THAN ON LOWER-ORDER LEVELS OF INFORMATION (FOR REVIEW SEE POON, 1985). IN ADDITION, MANY OF THE OLDER ADULTS IN THIS STUDY EXHIBITED A STYLE OF RESPONDING IN WHICH THE MORAL AND/OR SOCIAL-NORMATIVE MEANING OF THE TEXT WAS RECALLED AS WELL. THESE RESULTS NOT ONLY REPLICATE THE FINDINGS OF LABOVIE-VIEF ET AL. (1981) BUT, IN ADDITION, EXTEND THOSE FINDINGS TO A TEXT OTHER THAN A FABLE.

AT LEAST TWO DIFFERENT MODELS OF AGING MIGHT ACCOUNT FOR THESE OBSERVED AGE DIFFERENCES. IN ONE, AGING IS DESCRIBED AS A GENERAL DECLINE IN INFORMATION-PROCESSING AND MEMORY CAPACITY (E.G., CRAIK & SIMON, 1980). FROM THIS PERSPECTIVE, THE OLDER ADULT MUST THEREFORE DEVELOP A STRATEGY BY WHICH TO EFFICIENTLY ALLOCATE HIS OR HER LIMITED PROCESSING RESOURCES. THUS, A SHIFT TO A QUALITATIVELY DIFFERENT LEVEL OF PROCESSING (E.G., 'GIST'; SOCIAL MEANING) MAY REPRESENT AN ADAPTIVE COMPENSATORY MECHANISM.

SUCH A POSITION, HOWEVER, CAN ONLY ACCOUNT FOR THE FACT THAT EVEN WITH LOSS AND INCREASING RIGIDITY, THERE CAN NEVERTHELESS BE A CONCENTRATION ON THOSE BEHAVIORS WHICH ARE MOST ADAPTIVE, E.G., RETENTION OF THE MOST ESSENTIAL AND GLOBAL FEATURES OF INPUT. IT DOES NOT DEAL, HOWEVER, WITH THE PROPOSITION THAT MATURE ADULTHOOD MAY BRING A NOVEL AND ADAPTIVE REORGANIZATION OF THINKING (SEE LABOVIE-VIEF, IN PRESS). A TRULY ADAPTIVE MODEL OF AGING MUST THEREFORE POSIT ADDITIONAL MECHANISMS. FOR EXAMPLE, WITH INCREASING AGE/EXPERTISE, KNOWLEDGE SYSTEMS MAY BECOME INCREASINGLY AUTOMATED AND ENCAPSULATED, NECESSITATING A SHIFT TO PROCESSING MECHANISMS WHICH ARE MORE HEURISTIC, ANALOGICAL, AND FIGURATIVE. FROM THIS PERSPECTIVE, THEN, MATURE ADULTHOOD MAY BE CHARACTERIZED BY SUCH ADAPTIVE BEHAVIORS AS THE INCREASING ABILITY TO INTERFACE TEXT INFORMATION WITH REAL-WORLD KNOWLEDGE, THE ABILITY TO MORE DEEPLY PROCESS PSYCHOLOGICAL AND AFFECTIVE INFORMATION, AND THE ABILITY TO ENCODE AND TRANSMIT CULTURALLY RELEVANT INFORMATION IN HIGHLY SYMBOLIC (E.G., METAPHORIC AND MYTHIC) FORMS.

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Table 1

Demographic Data for Participants

Demographic Variable	Older Adults ^a	Young Adults ^b
N	39	40
Sex M/F	19/20	20/20
Mean Age	65.67	18.73
Mean Vocabulary Score ^c	21.77	14.28
Mean Years of Education	14.49	12.68
Mean SES ^d	3.72	3.45

^a Community dwelling volunteers.

^b College undergraduates; participation fulfilled an introductory psychology course requirement.

^c Advanced Vocabulary Test (36 items) from the Kit of Factor-Referenced Cognition Tests (Ekstrom et al, 1976).

^d Hollingshead's Four Factor Index of Social Status; values can range from 1 to 5, where 5 represents the highest SES score and 1 the lowest.

Table 2

Examples From Each Response Category

Response Category	Example
Listings:	John Smith wanted to make a major contribution to science. John dreamt of winning the Nobel Prize. John worked on a problem that no other biochemist could solve.
Integrations:	John was a man with very high goals and ambitions.
Interpretations:	To have a goal in life is what life is all about.
Additions:	John worked long, hard hours on his research.

Table 3

Means and Standard Deviations for the Number of Protocol Units in Each Response Category by Age Group and Recall Condition.

Recall Condition	Age Group	
	Older Adults (n=39)	Young Adults (n=40)
<u>Total Recall</u>		
Listings	14.00 (6.20)	20.20 (5.81)
Integrations	1.90 (1.10)	1.70 (2.11)
Additions	2.10 (1.79)	2.20 (1.62)
Interpretations	0.00 (0.00)	0.00 (0.00)
<u>Summary</u>		
Listings	9.50 (5.85)	17.30 (3.56)
Integrations	2.90 (2.13)	2.00 (1.49)
Additions	1.60 (1.51)	2.30 (1.70)
Interpretations	1.30 (2.31)	0.00 (0.00)
<u>Gist</u>		
Listings	7.90 (6.06)	17.90 (5.67)
Integrations	2.70 (1.64)	2.30 (1.83)
Additions	1.00 (1.05)	2.40 (2.12)
Interpretations	0.80 (1.23)	0.00 (0.00)
<u>Gist + Moral</u>		
Listings	7.22 (7.46)	16.10 (8.56)
Integrations	3.00 (1.12)	2.20 (1.48)
Additions	1.22 (1.48)	3.60 (3.72)
Interpretations	1.22 (1.09)	2.00 (2.21)

Standard deviation in parentheses.

Table 4

Response Pattern Descriptions

Pattern 1 (Text-based). Responses in this cluster were the longest (mean=21 units) and were comprised primarily of Listings (mean=17.21). They contained several Additions (mean=2.44), and very few Integrations (mean=1.06). The presence of Interpretations was negligible in this group of responses (mean=.18). Thus, individuals in this group tended to 'list', or closely reproduce, the information as it was presented in the text. When they did deviate from the text proper, it was only to elaborate, or 'fill-in', the information that was given.

Pattern 2 (Integrative). Responses in this cluster were about the same length as those in the first cluster (mean=20 units). They also were comprised primarily of Listings, although fewer (mean=14.36). There were more Integrations (mean=3.40) than Additions (mean=1.96). In addition, there were more Integrations and fewer Additions in this group than in the first cluster's responses. Finally, the presence of Interpretations was negligible in this group of responses, (mean=.14). Thus, individuals in this group departed from a strict adherence to the text proper by transforming parts of the text *per se* into higher-order, or 'gist', units of information. They also tended to do some 'filling-in', or elaborating, of the given information.

Pattern 3 (Interpretive). The pattern of responding in this group departed radically from the other two groups' patterns. First, these responses were much shorter (mean=11 units) and contained relatively few Listings (mean=4.38). Second, they contained almost as many Integrations (mean=3.06) as Listings. Third, there were very few Additions present (mean=.75). And fourth, they contained Interpretations (mean=2.13). Thus, individuals in this group transformed the text proper into 'gist' as well as interpretive units of meaning. These individuals did not tend to do much elaboration or 'filling-in'.

Table 5

Number of Subjects Exhibiting Each Response Style by Age Group and Recall Condition.

Recall Condition	Age Group					
	Older Adults			Young Adults		
	Response Cluster 1	Response Cluster 2	Response Cluster 3	Response Cluster 1	Response Cluster 2	Response Cluster 3
Total Recall	5	4	1	7	3	0
Summary	3	4	3	6	4	0
Gist	1	5	4	6	4	0
Gist + Moral	1	2	6	5	2	2
Totals	10	15	14	24	13	2

Table 6

Log Linear Analysis: Main Effect for Age

Cluster	Age Group		Totals
	Older Adults	Young Adults	
1	10 (26%)	24 (62%)	34 (43.5%)
2	15 (38%)	13 (33%)	28 (36%)
3	14 (36%)	2 (5%)	16 (20.5%)

Chi square, 2 df = 16.207, $p < .001$

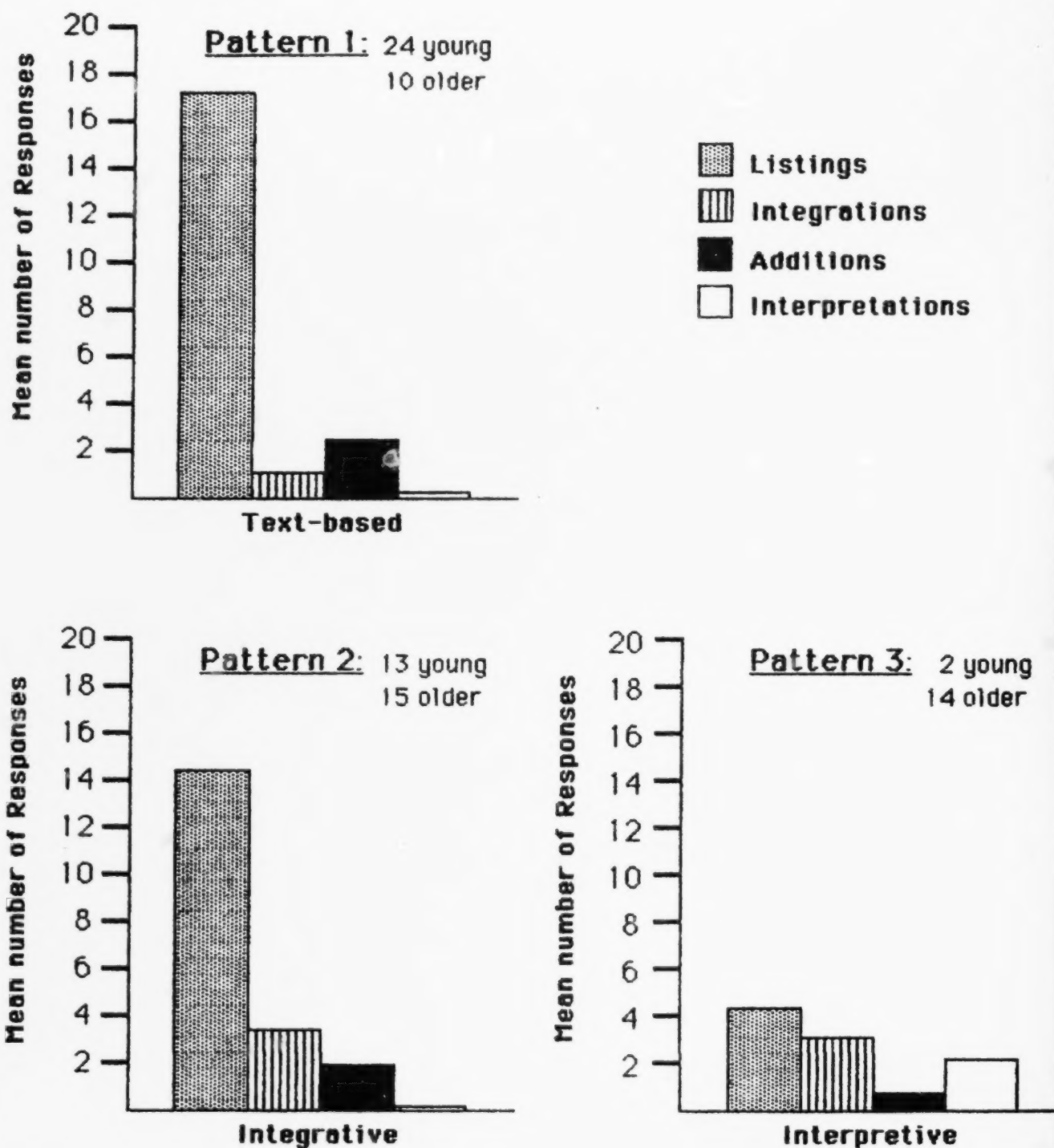


Figure 1
Mean Profiles for the Three Types of Response Styles